



## A conspectus of *Teucrium* (Lamiaceae) in Queensland

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### Introduction

*Teucrium* L. is a large cosmopolitan genus of around 260 species, with a centre of diversity in the Mediterranean region (Li and Hedge 2017). It is the largest genus of the Tribe Ajugoideae, which also includes e.g. *Clerodendrum* L., *Aegiphila* Jacq., *Rothea* Raf. and *Ajuga* L. (Stevens 2001 onwards). In its traditional circumscription, *Teucrium* is characterised by its terminal style, dry fruits comprising four mericarps, and the corolla in which the upper lip is lacking or highly reduced. The recent phylogenetic study by Salmaki et al. (2016) has demonstrated the paraphyletic nature of the traditional circumscription, and they advocated an expansion of the generic limits to include *Spartothamnella* Briq. and *Oncinocalyx* F.Muell. This has made *Teucrium* more difficult to define morphologically, as most species from the other two genera feature corollas that are close to being actinomorphic, and the fruit of the former is a drupe.

Toelken (1985), Conn (2002), Conn (2006), Toelken and Cunningham (2008), Walsh and O'Brien (2013) and Shepherd and Thiele (2017) are the most recent taxonomic papers dealing with Australian *Teucrium*.

Twenty formally named species are currently accepted for Australia (15 spp. of traditional *Teucrium*, 4 spp. of *Spartothamnella* and *Oncinocalyx betchei* F.Muell.), nine of which are indigenous to Queensland. In this paper, a further five species are newly described (*T. daucooides* A.R. Bean, *T. fallax* A.R. Bean, *T. irroratum* A.R. Bean, *T. modestum* A.R. Bean and *T. sagittatum* A.R. Bean), bringing the Queensland total to 14 species.

Lectotypes are chosen for *T. argutum* R.Br., *T. corymbosum* R.Br., *T. integrifolium* Benth. and *T. racemosum* R.Br.

### Abstract

The 14 species of *Teucrium* L. indigenous to Queensland are listed with full nomenclatural data and notes on distribution and habitat. Five species (*T. daucooides* A.R.Bean, *T. fallax* A.R.Bean, *T. irroratum* A.R.Bean, *T. modestum* A.R.Bean and *T. sagittatum* A.R.Bean) are newly described; full descriptions, distribution maps and illustrations are provided, with notes on related species, conservation status and habitat. Lectotypes are chosen for *T. argutum* R.Br., *T. corymbosum* R.Br., *T. integrifolium* Benth. and *T. racemosum* R.Br. An identification key for the Queensland species of *Teucrium* is provided.

**Keywords:** new species, taxonomy, lectotypes, Queensland flora, conservation status.

## Materials and methods

This paper is based on a morphological study of specimens at BRI and MEL, and high resolution images of type specimens from BM, CANB, K and MEL examined on the JSTOR Global Plants website (JSTOR 2017). Measurements of leaves, bracteoles, calyx and mericarp are based on dried material, whereas measurements of the corolla, stamens and style are based on material preserved in spirit or reconstituted in boiling water. For the cymose inflorescences considered here, the pedicel

is defined as the  $a_1$  axis plus the anthopodium, as in Conn (1984), i.e. the stalk of the flower/fruit including portions above and below the bracteoles. The peduncle is the most basal 'stalk' of the inflorescence, arising from the leaf axil.

The distribution map was compiled using DIVA-GIS Version 7.5.0 (<http://www.diva-gis.org>), from localities or geocodes given on the labels of specimens at BRI. Species treatments are arranged in alphabetical order.

Abbreviations used in the specimen citations include N.P. for National Park and S.F. for State Forest.

### Key to Queensland species of *Teucrium*

1	Branchlets with dendritic or branched hairs.....	2
1:	Branchlets glabrous or with simple (unbranched) hairs.....	4
2	Leaves and calyx with simple (unbranched) hairs; pedicels 1.5–2.3 mm long.....	<i>T. fallax</i>
2:	Leaves and calyx with branched hairs; pedicels 0.4–1.0 mm long.....	3
3	Larger leaves 3–6 mm long; fruit comprising four mericarps, enclosed in calyx tube.....	<i>T. micranthum</i>
3:	Larger leaves 6–20 mm long; fruit a red drupe, exceeding calyx tube.....	<i>T. puberulum</i>
4	Branchlets glabrous.....	5
4:	Branchlets sparsely to very densely hairy.....	7
5	Inflorescence a terminal many-flowered spike or raceme.....	<i>T. sagittatum</i>
5:	Inflorescences axillary, 1–3-flowered.....	6
6	Branchlets longitudinally striate; leaves absent or rudimentary; pedicel and calyx glabrous; corolla lobes all of similar size and shape.....	<i>T. junceum</i>
6:	Branchlets not longitudinally striate; leaves well developed, longer ones 26–55 mm long; pedicel and calyx sparsely hairy; corolla strongly zygomorphic.....	<i>T. integrifolium</i>
7	Inflorescence a terminal spike or raceme; corolla mauve to purple.....	8
7:	Inflorescences axillary, solitary or cymose; corolla white.....	10
8	Leaves linear to sagittate, 5–12 times longer than broad; calyx tube 1.7–2.2 mm long at anthesis; stamens 3.5–4.3 mm long.....	<i>T. sagittatum</i>
8:	Leaves ovate to orbicular, 1.1–2.6 times longer than broad; calyx tube 2.3–4.6 mm long at anthesis; stamens 7–9 mm long.....	9
9	Leaves pinnatifid to pinnatisect or bipinnatifid, usually with glandular hairs; petioles winged.....	<i>T. daucoides</i>
9:	Leaves serrate, without glandular hairs; petioles not winged.....	<i>T. argutum</i>
10	Flowers sessile; calyx lobes slender, hooked at apex.....	<i>T. betchei</i>
10:	Flowers pedicellate; calyx lobes deltate, not hooked.....	11
11	Branchlets, pedicels and calyces densely covered with glandular hairs.....	<i>T. irroratum</i>
11:	Branchlets, pedicels and calyces without glandular hairs.....	12
12	Calyx with patent hairs 0.4–0.6 mm long.....	<i>T. modestum</i>
12:	Calyx hairs antrorse to appressed, 0.05–0.20 mm long.....	13
13	Inflorescence 5–20-flowered; calyx hairs curved; leaf margins serrate.....	<i>T. corymbosum</i>
13:	Inflorescence 1–3-flowered; calyx hairs straight; leaf margins entire or undulate.....	14
14	Pedicels 1.5–3.5 mm long; spindly shrub; leaves sparse, ± deciduous; fruit a succulent drupe.....	<i>T. teucriiflorum</i>
14:	Pedicels 4.5–20 mm long; compact shrub; leaves numerous, persistent; fruit consisting of four dry mericarps.....	15
15	Branchlets densely hairy (obscuring surface); longest leaves 10–25(–45) mm long, at least some with scalloped or undulate margins; pedicels at an angle of 40–90 degrees to the branchlet.....	<i>T. racemosum</i>
15:	Branchlets sparsely hairy or almost glabrous; longest leaves 26–55 mm long, all entire; pedicels at an angle of 20–50 degrees to the branchlet.....	<i>T. integrifolium</i>



## Taxonomy

### *Teucrium argutum* R.Br., *Prodr.* 504 (1810)

*T. argutum* R.Br. var. *argutum*, *Fl. Austral.* 5: 135 (1870).

**Type:** NEW SOUTH WALES. Hawkesbury, undated, *R. Brown s.n.* (Bennett Number 2390) (lecto: BM 001040994, here designated; isolecto: BM 001040995, CANB 278995, K 000881573, MEL 2294209, MEL 2294211).

**Illustration:** Leiper et al. 2017 p. 144

**Distribution and habitat:** Extending from just south of Sydney, Central Coast, New South Wales, to Lakeland Downs (near Cooktown) in Queensland. It grows in forest and woodland in loamy or clay-loam soils, mainly on hillsides.

**Typification:** The specimen chosen as the lectotype comprises several plants, all very similar in appearance and all in full flower. There is a label in Brown's handwriting, and another label displaying the number assigned by Bennett.

### *Teucrium betchei* (F.Muell.) Kattari and Salmaki, *Taxon* 65: 818 (2016)

*Oncinocalyx betchei* F.Muell., *S. Sci. Rec.* 3: 70 (1883). **Type:** NEW SOUTH WALES. Namoi River near Gunnedah, January 1883, *E. Betche s.n.* (lecto: MEL 583547, fide Munir (1991); isolecto: NSW145058).

**Distribution and habitat:** Confined to the southern Darling Downs area Queensland, but widespread on the north-western slopes of New South Wales. It grows on grassy flats in eucalypt woodland.

### *Teucrium corymbosum* R.Br., *Prodr.* 504 (1810)

**Type:** NEW SOUTH WALES. Port Jackson, undated, *R. Brown s.n.* (Bennett Number 2389) (lecto: BM 001040992, here designated; isolecto: BM 001040993, CANB 278996, K 000881583, K 000881584, MEL 2294212).

**Illustrations:** Leiper et al. 2017 p. 481

**Distribution and habitat:** Scattered in the south-eastern part of Queensland, extending as far north as Cudmore National Park, north-west of Alpha. Widespread in New South Wales, Victoria, Tasmania and South Australia. It inhabits eucalypt woodland or open forest on deep red-brown soils or shallow sandy soils on stony hills.

**Typification:** The specimen chosen as the lectotype

bears a label in Robert Brown's handwriting, and a blue label with the number '2389'. It is a flowering specimen in good condition, and it is in accord with the description in the protologue.

### *Teucrium daucoides* A.R. Bean sp. nov.

**Type:** QUEENSLAND. DARLING DOWNS DISTRICT: Pittsworth-Millmerran road, at Elsdon Road turnoff, 20.i.2002, *A.R. Bean 18338* (holo: BRI AQ553327 (1 sheet + spirit); iso: K, MEL 2280551, NSW).

With affinity to *T. argutum*, but differing by the usually glandular hairy leaves and branchlets, the deeply divided leaves, the winged petioles and the generally longer calyces.

*Teucrium argutum* var. *incisum* Benth., *Fl. Austral.* 5: 135 (1870). **Type:** QUEENSLAND. Dawson River, undated [1856], *F. Mueller s.n.* (syn: K 000881577); Darling Downs, undated, *H. Lau* (syn: K 000881575); Armadilla, undated [1867–1871], *W. Barton s.n.* (syn: MEL 2241834).

*Teucrium* sp. (Pittsworth A.R. Bean 18338), in Bean and Forster (2016). **Illustration:** Leiper et al. 2017 p. 144, as *Teucrium* sp. aff. *argutum*

**Erect shrub** 0.2–0.4 m high, often with several stems from ground level. **Branchlets** quadrangular, faces grooved; indumentum very dense with patent glandular hairs 0.10–0.25(–0.40) mm long, and moderately dense, simple, retrorse, eglandular, ± transparent hairs, 0.05–0.20 mm long; sessile glands sparse. **Leaves** opposite, petiolate. Lamina discolorous, dark green above, broadly-ovate in outline, pinnatifid, pinnatisect or bipinnatifid, the largest leaves 11–41 × 7.5–20 mm, 1.1–1.8 times longer than broad; apex acute; base broadly cuneate; venation obscure. Upper surface not bullate, with dense indumentum of patent glandular hairs and retrorse eglandular hairs (as per branchlets), rarely glabrous. Lower surface pale green, with raised venation, with dense indumentum of patent glandular hairs and retrorse eglandular hairs (as per branchlets), rarely glabrous; sessile glands abundant throughout. Petioles 2.5–15 mm long, 24–47% of the lamina length, winged. Inflorescences terminal, spicate or racemose, spikes 4–11 cm long; bracts opposite, narrowly elliptic to elliptic, sometimes toothed, 6–14 mm long, persistent, apex acute. Pedicel (1.0–)1.5–3.0 mm long. **Calyx** campanulate, 10-veined, with 5 subequal deltate lobes;



**Figure 1.** *Teucrium daucooides*. A. flowering branchlet ( $\times 1$ ). B. small section of young stem showing cross-sectional shape ( $\times 6$ ). C. lateral view of flower ( $\times 6$ ). D. dissected (opened-out) corolla with attached stamens ( $\times 6$ ). E. cross-section of corolla showing the vesicular hairs (above) and scattered glandular hairs (below) ( $\times 32$ ). F. mericarp, ventral view ( $\times 24$ ). G. mericarp, dorsal view ( $\times 24$ ). A,B from *Menkins ILM0581* (BRI); C-E from *Bean 18338* (BRI); F,G from *Menkins ILM0491 and Leiper* (BRI).



exterior surface with indumentum of dense patent glandular hairs 0.10–0.25 mm long, and moderately dense eglandular hairs 0.10–0.25 mm long, sessile glands present; interior surface with moderately dense glandular hairs; calyx tube 3.0–4.6 mm long at anthesis; calyx lobes 1.5–2.8 mm long at anthesis, 0.8–1.5 times longer than wide. *Corolla* 1-lipped, 5-lobed, white, outer surface with eglandular hairs and glandular hairs, inner surface with abundant vesicular hairs, mainly on central portion of corolla (where lobes intersect); terminal lobe broadly elliptic, 2.5–5.0 mm long, slightly concave; lateral lobes elliptic, 1.0–1.5 mm long; basal lobes elliptic, 1.4–1.8 mm long; tube 4.0–4.8 mm long. *Stamens* attached c. 1 mm above base of corolla tube, 8–9 mm long; filaments gently curved, with some glandular and eglandular hairs on the proximal half; anthers 4, cells medifixed, 0.7–0.8 mm long, with sparse glands around attachment point of filament; style glabrous, straight or slightly curved, 8.5–9.0 mm long; stigma 2-fid, the lobes 0.3–0.5 mm long. *Mericarps* 4, brown, ± globular, c. 1.5 mm long, surface smooth, glabrous, apical one-third with scattered sessile glands; ventral surface with large areole c. 0.9 mm long, glabrous. (Figure 1)

**Selected specimens examined:** QUEENSLAND. LEICHHARDT DISTRICT: Mount Playfair, 1894, *H.S. Biddulph s.n.* (MEL 1512018); 'Walton Downs', 20 miles NE of Clermont on Mackay road, 14.iii.1957, *W.J. Bisset E86* (BRI); Fitzroy Development Road, c. 18.2 km N of the Dingo rail crossing, adjacent to Taunton N.P., 3.vii.2011, *I.L. Menkins ILM0491 and G. Leiper* (BRI); Blackwater Creek, 1879, *P. O'Shanesy 3041* (MEL); Brigalow Research Station, Theodore, 18.i.1964, *J. Gillieatt s.n.* (BRI, AQ161300); c. 4 miles [6 km] E of Moura, 1.iii.1967, *R.J. Henderson 221* (BRI). BURNETT DISTRICT: Wondai, 18.ii.1966, *E. Hancock s.n.* (BRI, AQ161303). MARANO DISTRICT: Roma, 29.iii.1936, *S.T. Blake 10875* (BRI); Clerk Creek, via Hodgson Lane North, c. 15 km WNW of Roma, 27.iv.2011, *R. Aisthorpe RHA004* (BRI); Hamilton Park South, 29 km N of Yuleba, 14.ii.2011, *C.P. Eddie CPE1786 et al.* (BRI). DARLING DOWNS DISTRICT: 'Wallumba', at Condamine River, c. 18 km SSE of Miles, 19.vii.2010, *C.P. Eddie CPE1695* (BRI); 3.7 km along Lyndley Lane, N of Jimbour, 6.xii.1997, *A.R. Bean 12618* (BRI, MEL); 8.3 km WSW of Dalby on Myall Creek, 11.iv.2011, *E.J. Thompson EJT339 and M. Edginton* (BRI); SE corner of Bowenville Fishing Reserve, 21.xii.2011, *I.L. Menkins ILM0581* (BRI); Jondaryan, 22.ii.1935, *S.T. Blake 7737* (BRI); Warrego Highway near Oakey, 27° 21' 20" S 151° 34' 13" E, 4.iii.2013, *R.J. Fensham 6350* (BRI); 1.7 km SSW of Clifton, Clifton Dump, 2.ii.1995, *D.A. Halford Q2421* (BRI); Goondiwindi, 30.v.2001, *M. Fea s.n.* (BRI, AQ718902).

**Distribution and habitat:** Clermont, Queensland, south to Goondiwindi, usually 200–400 km from the east coast (Figure 6); also extending south to Dubbo in New South Wales. It inhabits black cracking clay soil, often on alluvium, in grassland or associated with *Eucalyptus camaldulensis* Dehnh., *Casuarina cristata* Miq. or *Acacia harpophylla* F.Muell. ex Benth.

**Phenology:** Flowers have been recorded from every month of the year; fruits have been recorded in July.

**Affinities:** *Teucrium daucoides* appears to be related to *T. argutum*, but differs by the presence of glandular hairs on the branchlets and leaves (rarely lacking), while *T. argutum* has eglandular hairs only on the branchlets and leaves; *T. daucoides* has finely divided pinnatifid or bipinnatifid leaves while the leaves of *T. argutum* are serrate; the calyx tube (3.0–4.6 mm long) and calyx lobes (1.5–2.8 mm long) of *T. daucoides* are generally longer than *T. argutum* (mostly 2.3–3.2 mm and 1.0–1.6 mm respectively), although some populations of *T. argutum* exist with calyx tubes up to 4.2 mm long and lobes to 2.9 mm long; the petioles of *T. daucoides* are winged (with green tissue extending to its base (not winged in *T. argutum*). The habitat of *T. daucoides* (cracking black clays in alluvial grassland or open woodland) differs from that of *T. argutum*, which favours freely draining loam or clay-loam soil in a woodland or open-forest hillside habitat.

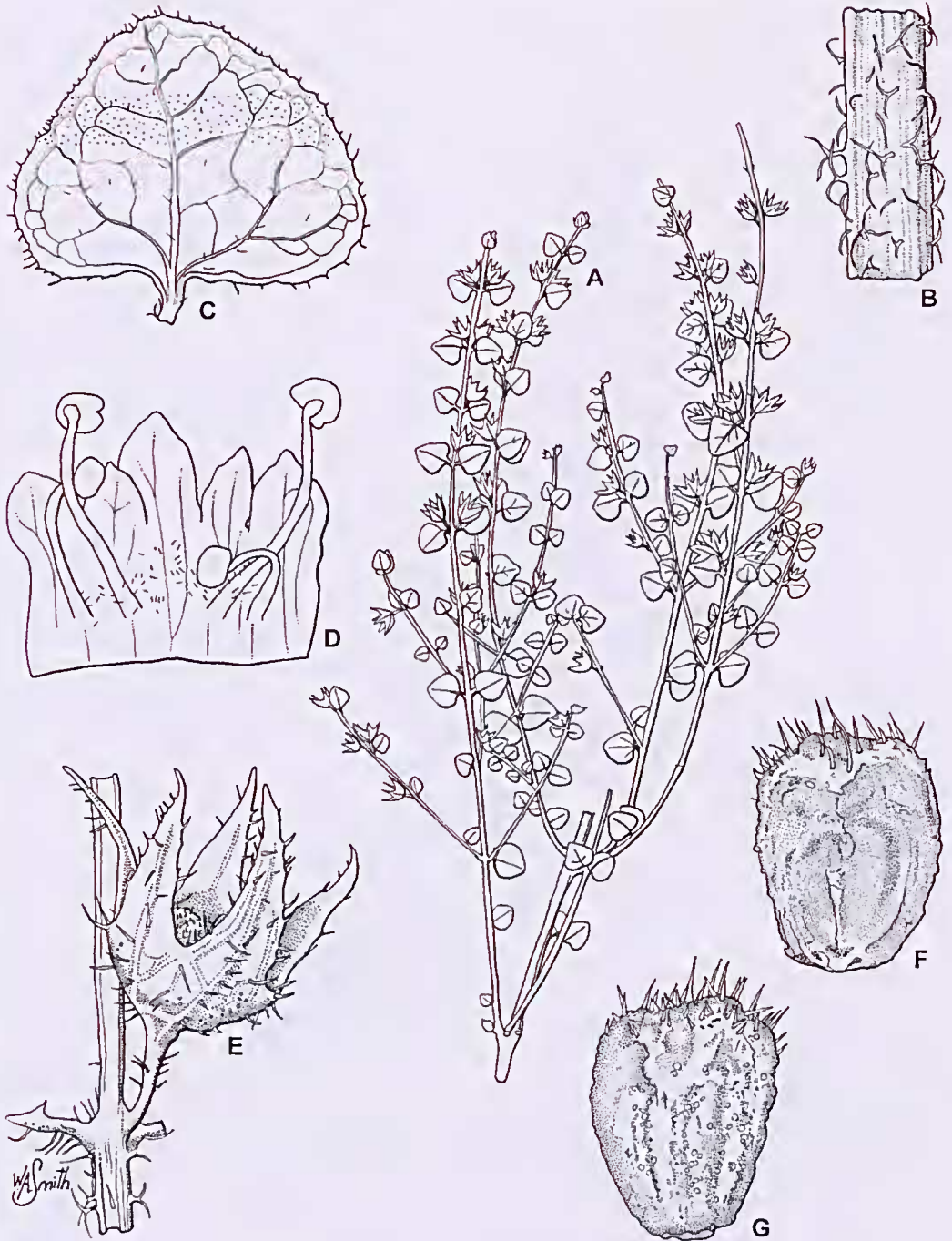
**Conservation status:** A common and widespread species. Least Concern according to the Red-list criteria of the IUCN (IUCN 2012).

**Etymology:** The epithet refers to the highly divided leaves possessed by this species, which resemble the leaves of *Daucus* spp. (Apiaceae).

**Notes:** Considerable variation is evident in this species. Populations in the Roma district have leaves that bear only eglandular hairs. Specimens from the northern end of the range have leaves that are smaller than the type and strictly pinnatifid (no tendency for pinnatisect or bipinnatifid leaves), and the bracts and flowers are somewhat smaller.

### *Teucrium fallax* A.R. Bean sp. nov.

**Type:** QUEENSLAND. LEICHHARDT DISTRICT: Lonesome Holding, on northern side of Candlesticks Gully, NE of Injune, 26.iv.2004, *C.P. Eddie Lot 1, G. Graham and W. McDonald* (holo: BRI AQ579706).



**Figure 2.** *Teucrium fallax*. A. fruiting branchlet ( $\times 1$ ). B. small section of young stem showing branched hairs ( $\times 16$ ). C. abaxial surface of leaf ( $\times 6$ ). D. opened-out corolla with attached stamens ( $\times 16$ ). E. fruiting calyx and pedicel ( $\times 10$ ). F. mericarp, ventral view ( $\times 24$ ). G. mericarp, dorsal view ( $\times 24$ ). All from C.P. Eddie Lot 1, G. Graham and W. McDonald (BRI, AQ 579706).



With affinity to *T. micranthum*, but differing by the unbranched hairs on the leaves and calyx, the longer pedicels, and the shorter mericarps bearing many simple hairs.

*Erect shrub* 0.3–1.0 m high, densely branched. *Branchlets* quadrangular; hairs sparse to moderately dense to dense, branched, mostly 2-armed, occasionally 3- or more armed, eglandular, multicellular,  $\pm$  transparent, longest hairs 0.1–0.3 mm long, usually broader than long; glands absent. *Leaves* opposite, petioles 0.6–1.3 mm long, 12–20% of the lamina length, not winged; lamina discolorous, dark green above, broadly deltate to rhomboid, the largest ones 3.0–7.2  $\times$  3.3–7.0 mm, 0.8–1.2 times longer than broad; margins entire; apex obtuse; base broadly cuneate to obtuse; venation penninerved, veins obscure on upper surface, visible on lower surface. Upper surface not bullate, with sparse indumentum of simple (rarely branched) patent eglandular hairs, 0.2–0.5 mm long. Lower surface with raised veins, simple eglandular hairs very sparse to sparse, 0.10–0.25 mm long, mainly along veins; sessile glands abundant throughout. Inflorescences axillary, solitary; bracteoles opposite to subopposite, linear, 0.3–0.9 mm long, somewhat persistent, apex acute. Pedicel 1.5–2.3 mm long. *Calyx* campanulate, 10-veined, with 5 subequal deltate lobes; indumentum on exterior surface of sparse simple patent eglandular hairs 0.2–0.3 mm long, and scattered sessile glands; interior surface glabrous or rarely with a few simple hairs; calyx tube c. 1.0 mm long at anthesis, 1.0–1.7 mm long in fruit; calyx lobes 1.0–1.3 mm long at anthesis, 2.0–3.2 mm long in fruit, 1.5–2.5 times longer than wide. *Corolla* 1-lipped, 5-lobed, white, outer surface with eglandular hairs and sessile glands, inner surface with eglandular hairs on the tube only; terminal lobe broadly ovate, 1.0–1.2 mm long, slightly concave; lateral lobes broadly ovate, 0.7–1.1 mm long; basal lobes broadly ovate, 0.8–0.9 mm long; tube 0.9–1.2 mm long. *Stamens* attached midway along length of corolla tube, 2–3 mm long; filaments gently curved, with a few eglandular hairs in the proximal half, anthers 4, cells medifixed, 0.4–0.5 mm long, with sparse glands around attachment point of filament; style glabrous, curved, 2.5–3.5 mm long; stigma 2-fid, the lobes 0.6–0.9 mm long. *Mericarps* 4, light brown, ellipsoid, 1.5–1.6 mm long, surface smooth, apical one-third with patent eglandular hairs 0.10–0.25 mm long

and numerous sessile glands extending almost to base on dorsal side; ventral surface with large areole 0.8–1.1 mm long, glabrous. (Figure 2)

**Specimens examined:** QUEENSLAND. NORTH KENNEDY DISTRICT: 7.1 km N of Broken River, 3.vi.2000, R.J. Cumming 19682 (BRI); Broken River, 16.vi.1993, R.J. Fensham 1036 (BRI). LEICHHARDT DISTRICT: Palmgrove Fauna Reserve [now Palmgrove N.P.], Daringa, 6.vi.1989, S. Barry PG25 (BRI); near northern boundary of Palmgrove N.P., c. 3 km NE of Bakers Peak, 28.viii.1999, M. Watson and C. Appelman s.n. (BRI, AQ 553693).

**Distribution and habitat:** Endemic to Queensland. Known from three localities: Broken River (S of Greenvale), Palmgrove National Park (W of Theodore) and Lonesome Holding (NE of Injune) (Figure 6). It inhabits semi-evergreen vine thicket, or communities dominated by *Acacia harpophylla* (Brigalow), or a mixture of the two. At the Broken River site, growing on limestone karst, with little soil, elsewhere, growing in cracking clay or loamy-clay soil.

**Phenology:** Flowers are recorded for April and June; fruits in April, June and August.

**Affinities:** *Teucrium fallax* is similar in appearance to *T. micranthum*, but differs by the mericarps 1.5–1.6 mm long with many simple hairs on the apical one-third and with sessile glands almost throughout the dorsal surface (vs. 1.8–2.0 mm long, glabrous or with one or two branched hairs on apical one-third, and no glands on dorsal surface for *T. micranthum*), the inner surface of the calyx glabrous (vs. many branched hairs present for *T. micranthum*), the fruiting pedicels 1.5–2.3 mm (vs. 0.4–0.6 mm for *T. micranthum*), the hairs on the leaves and calyx all simple (all branched for *T. micranthum*). Furthermore, the inflorescence in *T. micranthum* comprises a very short lateral branchlet (0.5–0.7 mm long) which bears two leaves, then a single flower on a pedicel 0.4–0.6 mm long and lacking bracteoles. That does not occur in *T. fallax*, where there is just a single bracteolate flower/fruit emerging from the axil, without any leaf or branchlet development.

**Conservation status:** A status of Vulnerable (VU B2ab(ii)(iii)) is recommended based on Red-list criteria (IUCN 2012). The species is threatened by land clearing and weed incursion.

**Etymology:** The epithet is from the Latin '*fallax*' meaning deceitful or false. This refers to its close resemblance to *T. micranthum* in general form and flower size.

**Note:** Conn (2002), in the protologue of *T. micranthum*, cited some specimens here regarded as *T. fallax*. However, his description appears to be based solely on material of *T. micranthum*.

***Teucrium integrifolium* Benth., *Fl. Austral.* 5: 133 (1870).**

**Type:** QUEENSLAND. BURKE DISTRICT: Flinders River, undated, *J. Sutherland* 84 (lecto, here designated: MEL 2294216).

**Distribution and habitat:** Widespread in Queensland except in the far north and coastal areas, found from Thurulgoonia (S of Cunnamulla) to Gregory Downs (N of Mount Isa), and east as far as Biloela and Dalby. Also widely distributed in the Northern Territory. It inhabits plains and alluvial systems on black cracking clay soils. It may be associated with Mitchell grass (*Astrebla* spp.) in grassland communities, or as a component of open woodland dominated by *Eucalyptus coolabah* Blakely and Jacobs, *E. orgadophila* Maiden and Blakely or *Acacia harpophylla* commonly associated with the shrub *Duma florulenta* (Meisn.) T.M. Schust.

**Typification:** The specimen chosen as the lectotype is one of the specimens cited by Benthham in the protologue. It is a good quality flowering specimen, and it is in accord with the description in the protologue.

**Note:** This species has not been recorded for New South Wales, but as there is an occurrence at Thurulgoonia, S of Cunnamulla, about 30 km from the New South Wales border, its occurrence in that state is highly likely.

***Teucrium irroratum* A.R. Bean sp. nov.**

**Type:** QUEENSLAND. PORT CURTIS DISTRICT: Table Mountain, 6 km S of Kabra, 8.ii.1997, *P.I. Forster PIF20299* and *M. Watson* (holo: BRI AQ652787; iso: NSW, to be distributed).

*Erect shrub* 0.5 m high. *Branchlets* almost terete, not markedly quadrangular; with moderately dense, simple, patent, eglandular, multicellular,  $\pm$  transparent hairs 0.4–1.2 mm long; and abundant glistening patent glandular hairs, mostly <0.1 mm long, but with some up to 0.5 mm. *Leaves* opposite or in whorls of three; petioles 1–2 mm long, 1–4% of lamina length; lamina discolorous, dark green above, elliptic to ovate, the

largest ones 39–51  $\times$  15–21 mm, 2.1–2.8 times longer than broad; margins serrate, with 6–8 pairs of lobes, confined to the distal half of the lamina; apex acute; base narrowly cuneate; venation penninerved, veins obscure on upper surface, obvious on lower surface. Upper surface smooth except for sunken major veins, with moderately dense indumentum of patent transparent eglandular hairs, 0.2–0.8 mm long. Lower surface with raised veins, eglandular hairs sparse to moderately dense, 0.25–0.60 mm long, mainly along veins; sessile glistening glands and glandular hairs (to 0.15 mm long) abundant throughout. Inflorescences axillary, cymose, 4–9-flowered, dichasial; bracts opposite, elliptic to ovate, 3–4 mm long, persistent. Pedicel 4.5–7.0 mm long; inflorescence branches similar in length to pedicel; peduncle 17–28 mm long. *Calyx* campanulate 10-veined, with 5 subequal deltate lobes; indumentum on peduncles, pedicels and exterior surface calyx comprising dense patent glandular hairs 0.05–0.40 mm long, and some patent eglandular hairs to 0.6 mm long; interior surface of lobes with scattered sessile glands and short glandular hairs, interior surface of tube glabrous; calyx tube 2.0–2.3 mm long at anthesis, 2.0–2.4 mm long in fruit; calyx lobes 1.8–2.1 mm long at anthesis, 3.2–4.1 mm long in fruit, 1.5–3.0 times longer than wide. *Corolla* 1-lipped, 5-lobed, white (fide O'Shanesy), outer surface with scattered glandular and eglandular hairs, inner surface tube with eglandular hairs on the tube only; terminal lobe broadly ovate, 2.5–3.2 mm long, lateral lobes ovate, 1.8–2.2 mm long, basal lobes ovate, 2.5–3.2 mm long; tube 3.5–4.0 mm long. *Stamens* attached midway along length of corolla tube, 3.5–5.0 mm long; filaments with some glandular hairs on the distal half; anthers 4, cells medifixed, 0.7–0.8 mm long, with dense glands around attachment point of filament; style glabrous, 7.5–9.0 mm long; stigma 2-fid, the lobes c. 0.5 mm long. *Mericarps* 4, dark brown, ellipsoid, 1.6–2.0 mm long, surface smooth to faintly ridged, apical one-third with patent eglandular hairs 0.10–0.15 mm long and numerous sessile and subsessile glands; ventral surface with large areole 0.9–1.1 mm long, glabrous. (Figure 3)

**Specimens examined:** QUEENSLAND. PORT CURTIS DISTRICT: Table Mountain, undated [1866–67], *E.M. Bowman* 66 (MEL 63753); Table Mountain, iv.1867, *E.M. Bowman* 88 (MEL 2242919); near Rockhampton, 20.viii.1868, *P. O'Shanesy* No. 16, ser. 12 (MEL 2242907).





**Figure 3.** *Teucrium irroratum*. A. fruiting branchlet ( $\times 1$ ). B. small section of young stem showing cross-sectional shape ( $\times 6$ ). C. abaxial surface of leaf ( $\times 2$ ). D. fruiting calyx and pedicel ( $\times 6$ ). E. mericarp, ventral view ( $\times 24$ ). F. mericarp, dorsal view ( $\times 24$ ). All from Forster PIF20299 and Watson (BRI).

**Distribution and habitat:** Endemic to Queensland. The type was collected from Table Mountain, near the railway siding of Kabra, about 25 km SW of Rockhampton (Figure 6), where it grows in semi-evergreen vine thicket dominated by *Strychnos*, *Gyrocarpus*, *Archidendropsis* and *Planchonella cotinifolia* var. *pubescens* P.Royen, on a steep southerly slope with granite rocks. The 'Table Mountain' of Edward Bowman is 12–14 km to the south-east of this, near the present town of Bouldercombe (A.R. Bean, unpublished data).

**Phenology:** Flowers and fruits are recorded for February, April and August.

**Affinities:** *Teucrium irroratum* is apparently related to *T. corymbosum* R.Br. The latter is a very widespread and highly variable species, in need of taxonomic revision. Such a task is beyond the scope of this paper. For this reason, comparisons have been made only with the Queensland populations of *T. corymbosum*. From these populations, *T. irroratum* differs in several respects. The branchlets are more or less terete (strongly quadrangular for *T. corymbosum*); the longest branchlet hairs 0.4–1.2 mm long (0.15–0.25 mm long for *T. corymbosum*); branchlets with a mixture of glandular and eglandular hairs (eglandular only for *T. corymbosum*); the broader leaves, 2.1–2.8 times longer than wide (leaves narrower, 4–6 times longer than wide for *T. corymbosum*); the fruiting calyx lobes 3.2–4.1 mm long (2.0–2.7 mm long for *T. corymbosum*); the interior surface of calyx lobes with scattered sessile glands and short glandular hairs (glabrous for *T. corymbosum*); and the mericarps with eglandular hairs and sessile glands (sessile glands only for *T. corymbosum*).

**Conservation status:** Currently known only from a single population, although a field search may yet rediscover populations documented by Bowman and O'Shanesy in the 1860s. A status of Endangered (EN B2ab(ii)(iii); C2a(ii)), based on the Red-list criteria (IUCN 2012), is recommended. The species is threatened by land clearing and weed incursion.

**Etymology:** The epithet is from the Latin *irroratus* meaning 'bedewed, with dew drops'. This is in reference to the abundant glands and glandular hairs on most parts of the plant, resembling droplets of dew.

**Notes:** The indumentum pattern of *T. irroratum* is similar to *T. thieleanum* B.J.Conn, a Victorian species (Conn 2006), but *T. irroratum* differs by the shorter petioles, longer peduncles, and mericarps with a smooth or faintly ridged surface.

### ***Teucrium junceum* (A.Cunn. ex Walp.) Kattari and Heubl., *Taxon* 65: 818 (2016)**

*Spartothamnus junceus* A.Cunn. ex Walp., *Rep. Bot. Syst.* 6: 694 (1847); *Spartothamnella juncea* (A.Cunn. ex Walp.) Briq. in Engl. and Prantl., *Pflanz.* 4(3a): 161 (1895). **Type:** QUEENSLAND. MORETON DISTRICT: Brisbane River, x.1824, A. Cunningham 78 (lecto: K 000881359), fide Munir (1976).

**Illustration:** Leiper et al. 2017 p. 374, as *Spartothamnella juncea*.

**Distribution and habitat:** A very widespread species in eastern Queensland as far north as the Mount Surprise district. It is also common in New South Wales as far south as the Sydney hinterland (Central Coast) and Condobolin (South Western Plains). It usually grows in Brigalow or vine thicket communities in clayey soil.

### ***Teucrium micranthum* B.J.Conn, *Telopea* 9(4): 803 (2002).**

**Type:** QUEENSLAND. LEICHHARDT DISTRICT: Carnarvon National Park (Ka Ka Mundi Section), Tom's Tank, 3.4 km E of Park Boundary, 25.v.1999, B.J. Conn 4146, E.A. Brown and N.A. Leist (holo: NSW428108; iso: BRI AQ781651).

**Distribution and habitat:** A species of restricted distribution between Springsure and Charleville in central-southern Queensland. It commonly grows in communities dominated by Brigalow (*Acacia harpophylla*), but also in eucalypt woodland dominated by *Eucalyptus organophila*, *E. cambageana* Maiden or *E. populnea* F.Muell. Soil is invariably clayey.

### ***Teucrium modestum* A.R. Bean sp. nov.**

**Type:** QUEENSLAND. LEICHHARDT DISTRICT: Melaleuca Creek Scrub, Rookwood, grid ref. 8851-823292, 20.iv.1991, P.I. Forster PIF7964 and W.J. McDonald (holo: BRI AQ504874 (2 sheets + spirit); iso: AD, BISH, BM, CANB, CNS, DNA, E, HO, K, L, MEL, MO, NE, NSW, P, PERTH, PRE, US, Z), to be distributed.

*Teucrium* sp. (Ormeau G.Leiper AQ 476858), in Bean and Forster (2016). **Illustration:** Leiper et al. 2017 p. 374, as *Teucrium* sp. Ormeau

*Erect shrub* 0.4–1.5 m high, well branched. *Branchlets* quadrangular; hairs moderately dense to dense, simple,



antrorse, eglandular, multicellular,  $\pm$  transparent, longest hairs 0.6–1.1 mm long; glands absent. *Leaves* opposite; petioles 0.7–5.0 mm long, 9–30% of the lamina length, not winged; lamina discolorous, dark green above, ovate, the largest leaves 7–54  $\times$  4–25 mm, 1.4–2.2 times longer than broad; margins crenate, with 3–6(–10) pairs of lobes; apex obtuse; base broadly cuneate to obtuse; venation penninerved, veins obscure on upper surface, obvious on lower surface. Upper surface  $\pm$  bullate, with dense indumentum of tubercle-based, antrorse eglandular hairs, 0.3–0.9 mm long. Lower surface pale green, with raised veins, eglandular hairs sparse to moderately dense, 0.6–0.9 mm long, mainly along veins; sessile to subsessile glands abundant throughout. Inflorescences axillary, solitary or cymose, 1–7-flowered, dichasial; bracts subopposite, linear to oblanceolate, 0.6–2.2 mm long, somewhat persistent, apex acute. Pedicel 2.5–6.0 mm long; peduncle 0.5–5.0 mm long. *Calyx* campanulate, 10-veined, with 5 subequal deltate lobes; indumentum on exterior surface of dense patent eglandular hairs 0.4–0.6 mm long, and many sessile glands; interior surface glabrous; calyx tube 1.2–1.6 mm long at anthesis, 1.3–2.0 mm long in fruit; calyx lobes 1.6–2.0 mm long at anthesis, 2.2–4.0 mm long in fruit, 2–4 times longer than wide. *Corolla* 1-lipped, 5-lobed, white, outer surface with eglandular hairs and sessile glands, inner surface glabrous; terminal lobe broadly elliptic to orbicular, 3–5 mm long, strongly concave; lateral lobes elliptic, 1.8–2.8 mm long; basal lobes broadly ovate, 1.5–2.3 mm long; tube 2.5–3.5 mm long. *Stamens* attached midway along length of corolla tube, 6–9 mm long; filaments gently curved, with many glandular and eglandular hairs, mainly in the proximal half, but with some glandular hairs extending to distal half; anthers 4, cells medifixed, 0.8–1.1 mm long, with dense glands around attachment point of filament; style glabrous, curved, 8–9 mm long; stigma 2-fid, the lobes 0.5–1.0 mm long. *Mericarps* 4, dark brown, ellipsoid, 1.4–1.5 mm long, dorsal surface with obscure to prominent ridges, apical one-third with patent eglandular hairs 0.10–0.25 mm long and numerous sessile glands; ventral surface with large areole 0.7–0.9 mm long, covered with minute white glands or glabrous. (Figure 4)

**Selected specimens examined:** QUEENSLAND. NORTH KENNEDY DISTRICT: Moroides Gorge, W of Townsville, 1.v.1996, *R.J. Cumming 14638* (BRI); Bluewater Gorge, 5.v.2002, *R.J. Cumming 20604* (BRI, NSW); 14km NE of Ravenswood,

27.vi.1993, *E.J. Thompson CHA378 and Figg* (BRI); Leichhardt Range, grid ref: 8357-069826, 27.vii.1993, *R.J. Fensham 1037* (BRI). SOUTH KENNEDY DISTRICT: Mount Jukes N.P., NW of Mackay, 16.v.1991, *A.R. Bean 3189* (BRI). LEICHHARDT DISTRICT: Goodedulla N.P., Mongrel scrub, NW of Rockhampton, 21.iv.2013, *J. Wang JW0420* (BRI); NW corner of Heritage block, Yarra Station, NW of Gogango, 16.xii.1998, *W.J. McDonald 6608* (BRI). PORT CURTIS DISTRICT: Western base of Pine Mt slope, Shoalwater Bay, 9.v.2006, *W. Harris and S. Fox s.n.* (BRI, AQ736802); Lower slopes of Pine Mountain, near Sabina Point, Shoalwater Bay Training Area, 9.iv.2011, *A.R. Bean 30849 and D.A. Halford* (BRI, CANB). WIDE BAY DISTRICT: S.F. 50 Glenbar, 1.5km N of Mt Urah, 15.xi.1988, *P.I. Forster PIF4832A* (BRI); S.F. 50 Glenbar, 1km WSW of Mt Urah summit, 27.ii.1993, *P.I. Forster PIF13138 and P. Machin* (BRI, CNS, MEL); SF 50, Parish of Glenbar, W slope of Mt Urah, Jamieson lease, 13.ii.1996, *P. Grimshaw PG2292 and G.P. Turpin* (BRI, NSW); Imbil, vii.1921, *W.D. Francis s.n.* (BRI, AQ161400). MORETON DISTRICT: Upper Ormeau, on a spur of the Darlington Range, 26.v.1989, *G. Leiper s.n.* (BRI, AQ47685B); Mt Alford, Boonah District, i.1921, *W.D. Francis s.n.* (BRI, AQ161399).

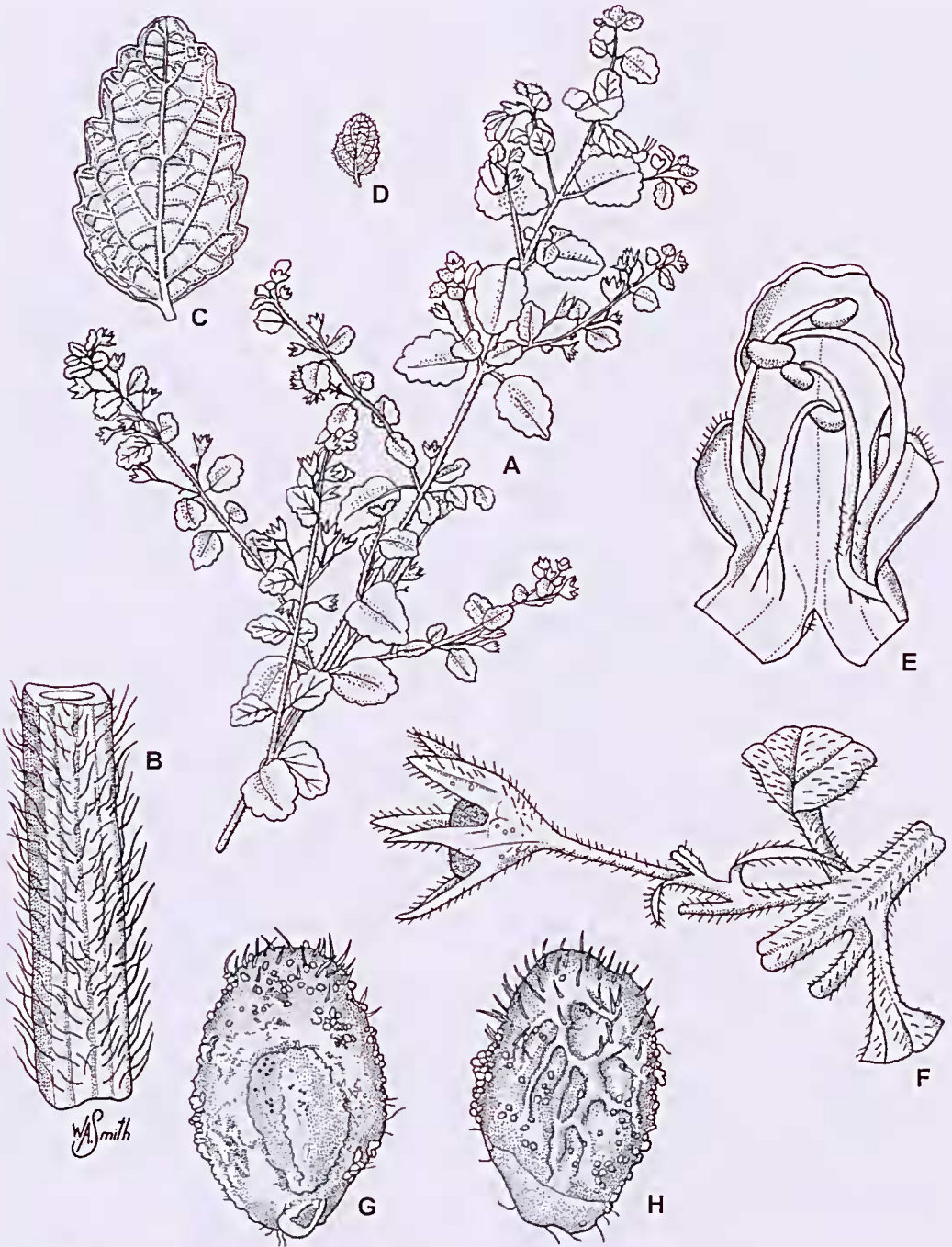
**Distribution and habitat:** Endemic to Queensland. It extends from Townsville in the north to Boonah in the south, and all known populations are within 110 km of the coast (Figure 6). It grows on steep and rocky hillsides in rainforest, usually Araucarian notophyll or microphyll vine forest dominated by *Araucaria cunninghamii* Mudie, but sometimes in vine thicket.

**Phenology:** Flowers are recorded from December to July; fruits are recorded from November to June.

**Affinities:** *Teucrium modestum* is similar to Queensland populations of *T. corymbosum*, but differs by the peduncles only 0.5–5.0 mm long (5–25 mm long for *T. corymbosum*); the leaves 1.4–2.2 times longer than wide (4–6 times for *T. corymbosum*); inflorescence 1–7-flowered (5–20 flowered for *T. corymbosum*); hairs on the calyx patent, 0.4–0.6 mm long (0.05–0.20 mm long for *T. corymbosum*), and the mericarps with eglandular hairs and sessile glands (sessile glands only for *T. corymbosum*).

**Conservation status:** The Extent of Occurrence is about 192000 km<sup>2</sup>, the Area of Occupancy is estimated at 5 km<sup>2</sup> and 15 subpopulations are known. The main threat is weed incursion. It does not currently qualify for Vulnerable status (IUCN 2012), but it is considered that those criteria may be met in the near future, hence a status of Near Threatened is considered appropriate.

**Etymology:** The epithet is from the Latin *modestum*



**Figure 4.** *Teucrium modestum*. A. flowering branchlet ( $\times 1$ ). B. small section of young stem showing cross-sectional shape ( $\times 8$ ). C. abaxial surface of leaf (large-leaved form) ( $\times 1$ ). D. abaxial surface of leaf (small-leaved form) ( $\times 1$ ). E. opened-out corolla with attached stamens ( $\times 8$ ). F. fruiting calyx and pedicel ( $\times 6$ ). G. mericarp, ventral view ( $\times 24$ ). H. mericarp, dorsal view ( $\times 24$ ). A from *Horris and Fox s.n.* (BRI, AQ736802); B, D from *Wong JW0420* (BRI); C, F-H from *Cumming 20604* (BRI); E from *Forster 7964 and McDonold* (BRI).



meaning 'mild' or 'modest'. This is in reference to the inconspicuous nature of the plant and its relatively small flower clusters.

**Note:** *Teucrium modestum* exhibits extraordinary variation in leaf size. The leaves on any given specimen are more or less uniform, but some specimens have far larger leaves than others. The largest leaves are possessed by populations in the northern part of its range, but small-leaved populations also occur there. The variation in leaf size does not appear to correlate with any other morphological character.

***Teucrium puberulum* (F.Muell.) Kattari and Bräuchler, *Taxon* 65: 818 (2016)**

*Spartothamnus junceus* var. *puberulus* F.Muell., *S. Sci. Rec.* 2: 55 (1882); *Spartothamnus puberulus* (F.Muell.) F.Muell., *Second Systematic Census Aust. Pl.* 171 (1889); *Spartothamnella puberula* (F.Muell.) Maiden and Betche, *Census N.S.W. Pl.* 177 (1916). **Type:** QUEENSLAND. Near the Suttor River, 1856, *F. Mueller* s.n. (lecto: MEL 68872; isolecto: K 000881361), fide *Munir* (1976).

**Illustration:** Cunningham et al. 2011 p. 571, as *Spartothamnella puberula*.

**Distribution and habitat:** This species is distributed in a continuous zone from central New South Wales to Charters Towers in Queensland, and there is a disjunct area of distribution in the southern Northern Territory. It grows in sandy or loamy soils on hills or plains, in association with a wide range of *Eucalyptus* spp. and *Acacia* spp.

***Teucrium racemosum* R.Br., *Prodr.* 504 (1810)**

**Type:** SOUTH AUSTRALIA. Spencer's Gulf, 10.iii.1802, *R. Brown* s.n. (Bennett Number 2388) (lecto: BM001040990, here chosen; isolecto: BM001040991, CANB278997, K000881587).

**Illustrations:** Alexander 2005 p. 298; Cunningham et al. 2011 p. 577.

**Distribution and habitat:** Widespread in south-west Queensland, as far north as Boulia and east to Roma (with one record further east at Tara). Widely distributed in all other mainland states. It grows on a wide range of soils from brown clays to red sandy loams, on plains or along watercourses. Associated species include *Eucalyptus coolabah*, *Acacia cambagei* R.T.Baker, *A. stenophylla* A.Cunn. ex Benth. and *Chenopodium auricomum* Lindl.

**Typification:** The specimen chosen as the lectotype bears a label in Robert Brown's handwriting. It is a good quality flowering specimen, and it is in accord with the description in the protologue.

***Teucrium sagittatum* A.R. Bean sp. nov.**

**Type:** QUEENSLAND. DARLING DOWNS DISTRICT: 'Riverside', near Chinchilla, 30.xii.1979, *V. Hando* 127 (holo: BRI AQ319746).

With affinity to *T. daucooides*, but differing by the slender sagittate leaves, the shorter bracts, the shorter calyx tube, the branchlets glabrous or with retrorse eglandular hairs only, and the shorter stamens.

*Teucrium* sp. 1 in Stanley and Ross (1986: 385).

**Erect shrub** 0.1–0.3 m high, sparsely branched. **Branchlets** quadrangular; glabrous or with sparse, simple, antrorse, eglandular, ± transparent, up to 0.1 mm long; glands sparse. **Leaves** opposite; petioles 1–7 mm long, 7–24% of the lamina length, winged; lamina discolorous, dark green above, linear to sagittate, the largest 12–33 × 1–6 mm, 5–12 times longer than broad; with a single pair of basal lobes, rarely entire or with 2–5 pairs of shallow lobes; apex acute; base broadly cuneate; venation obscure. Upper surface not bullate, glabrous or with sparse indumentum of patent glandular hairs 0.1–0.3 mm long. Lower surface pale green, with raised midvein; eglandular hairs sparse to moderately dense, restricted to midvein (lamina otherwise glabrous), 0.05–0.20 mm long; sessile glands abundant throughout. Inflorescences terminal, spicate or racemose, spikes 3–10 cm long; bracts opposite, elliptic, 1.3–3.5 mm long, persistent, apex acute. Pedicel 0.9–1.4 mm long. **Calyx** campanulate, 5-veined or veins obscure, with 5 subequal deltate lobes; indumentum on exterior surface of dense patent glandular hairs 0.10–0.25 mm long, eglandular hairs absent, sessile glands absent; interior surface with moderately dense glandular hairs; calyx tube 1.7–2.2 mm long at anthesis, 1.7–2.2 mm long in fruit; calyx lobes 0.9–1.3 mm long at anthesis, 1.1–1.4 mm long in fruit, 0.8–1.5 times longer than wide. **Corolla** 1-lipped, 5-lobed, mauve; outer surface with eglandular hairs and glandular hairs; inner surface with scattered eglandular hairs and abundant vesicular hairs, mainly towards terminal portion of corolla; terminal lobe broadly elliptic, 2.0–2.4 mm long, slightly concave; lateral lobes elliptic,



**Figure 5.** *Teucrium sagittatum*. A. flowering branchlet ( $\times 1$ ). B. small section of young stem and a leaf, showing abaxial surface ( $\times 6$ ). C. opened-out corolla with attached stamens ( $\times 10$ ). D. fruiting calyx and pedicel ( $\times 10$ ). E. mericarp, ventral view ( $\times 24$ ). F. mericarp, dorsal view ( $\times 24$ ). A, C-F from collector unknown (BRI, AQ161304); B from Hando 127 (BRI).



0.7–0.8 mm long; basal lobes elliptic, 0.6–0.9 mm long; tube 2.7–3.2 mm long. *Stamens* attached c. 1 mm above base of corolla tube, 3.5–4.3 mm long; filaments gently curved, with some glandular and eglandular hairs on the proximal half; anthers 4, cells medifixed, 0.5–0.6 mm long, with sparse glands around attachment point of filament; style glabrous, straight or slightly curved, c. 3.5 mm long; stigma 2-fid, the lobes 0.3–0.4 mm long. *Mericarps* 4, brown, ellipsoid, c. 1.3 mm long, surface smooth, glabrous, apical one-third with scattered sessile glands; ventral surface with large areole 0.7–0.8 mm long, glabrous. (Figure 5)

**Specimens examined:** QUEENSLAND. DARLING DOWNS: Rywung, near Chinchilla, 24.iv.1953, coll. *unknown* (BRI, AQ 161304); 'Riverside', property of Mrs V. Hando, Chinchilla, 20.xi.1979, V. Hando 119 (BRI). MORETON DISTRICT: Gatton Agricultural College, undated, *W.W. Bryan s.n.* (BRI, AQ161305).

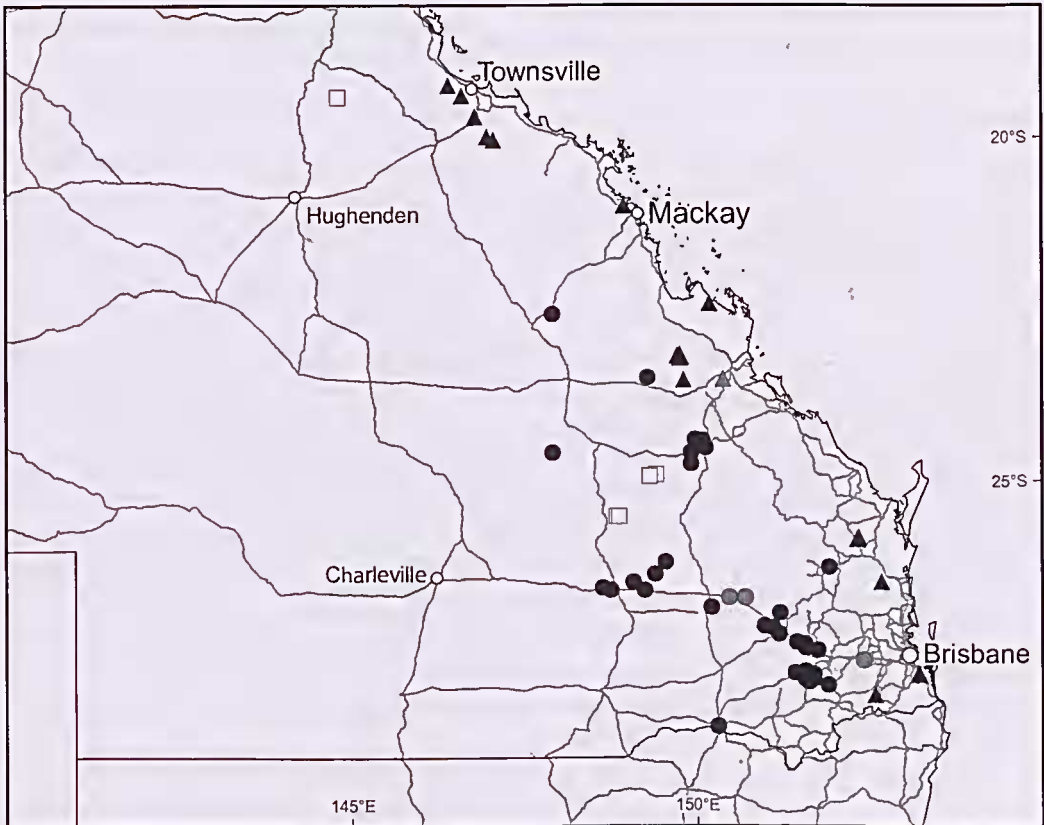
**Distribution and habitat:** Recorded from three locations in southern Queensland, two close to

Chinchilla and the other near Gatton (Figure 6). The habitat is unknown; the 1953 collection was growing as a "weed" in a grain-sorghum crop.

**Phenology:** Flowers and fruits have been collected in April, November and December.

**Affinities:** *Teucrium sagittatum* is similar to *T. daucoides*, but differing by the linear leaves with short basal lobes and upper surface often glabrous (pinnatifid to bipinnatifid leaves with persisting glandular and eglandular hairs for *T. daucoides*); the leaves 5–12 times longer than wide (1.1–1.6 times for *T. daucoides*); the bracts 1.3–3.5 mm long (6–14 mm long for *T. daucoides*); the outer surface of the calyx with glandular hairs only (glandular and eglandular hairs present for *T. daucoides*); the calyx tube 1.7–2.2 mm long at anthesis (3.0–4.6 mm long for *T. daucoides*); and the stamens 3.5–4.3 mm long (8–9 mm long for *T. daucoides*).

**Conservation status:** Searches by the author in the Chinchilla area for this species have been unsuccessful.



**Figure 6.** Distribution of *Teucrium* spp. *T. daucoides* (black circles), *T. fallax* (white squares), *T. irroratum* (grey triangle), *T. modestum* (black triangles), *T. sagittatum* (grey circles).

It perhaps would appear only after heavy rain or wildfire, although this remains to be confirmed. A status of Critically Endangered (CR B2b(i)(ii)(iii)(iv)c(iv)) is recommended based on the Red-list criteria (IUCN 2012). The species is threatened by land clearing, cropping, bovine grazing and weed incursion.

**Etymology:** The epithet refers to the sagittate or arrow-shaped leaves possessed by this species.

**Note:** Hando (1988) stated that the corolla is mauve in colour.

***Teucrium teucriiflorum* (F.Muell.) Kattari and Salmaki, *Taxon* 65: 818 (2016)**

*Spartothamnus teucriiflorus* F.Muell., *S. Sci. Rec.* 2: 55 (1882); *Spartothamnella teucriiflora* (F.Muell.) Moldenke, *Phytologia* 1:430 (1940). **Type:** NORTHERN TERRITORY. Near the Finke River, 1882, *H. Kempe* 438 (lecto: MEL 68887), fide Munir (1976).

**Distribution and habitat:** Found in the south-west quarter of Queensland. It also occurs in Western Australia, Northern Territory and South Australia. It inhabits arid or semi-arid woodlands and shrublands.

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## References

Alexander, R. (2005). A field guide to plants of the Channel Country, western Queensland. Channel Landcare Group Inc.  
 Bean, A.R. and Forster, P.I. (2016). Lamiaceae. In P.D. Bostock and A.E. Holland (eds), *Census of the Queensland Flora 2016*. Queensland Department of Science, Information Technology and Innovation: Brisbane. <https://data.qld.gov.au/dataset/census-of-the-queensland-flora-2016> Accessed 17 August 2017.  
 Conn, B.J. (1984). A taxonomic revision of *Prostonthero* Labill. sect. *Klonderia* (F.v.Muell.) Benth. (Labiatae). *Journal of the Adelaide Botanic Gardens* 6(3), 207–348.  
 Conn, B.J. (2002). *Teucrium microrhynchum* (Labiatae), a new species from Queensland, Australia. *Telopeo* 9(4), 803–806.

Conn, B.J. (2006). *Teucrium thieleonum* (Labiatae), a new species from Victoria, Australia. *Telopeo* 11, 135–140.  
 Cunningham, G.M., Mulham, W.E., Miltorpe, P.L. and Leigh, J.H. (2011). *Plants of western New South Wales*. CSIRO Publishing: Collingwood.  
 Hando, V. (1988). 'Plants of the western Darling Downs, Barakula-Gurulumundi and south-west Burnett', in R. Hando (ed.), *Going Bush with Chinchilla Nats*, pp. 96–166. Chinchilla Field Naturalists Club Inc.: Chinchilla.  
 IUCN (2012). International Union for the Conservation of Nature. IUCN Red List Categories and Criteria, version 3.1, 2<sup>nd</sup> ed. <https://portals.iucn.org/library/efiles/documents/RL-2001-001-2nd.pdf> Accessed 10 August 2017.  
 JSTOR (2017). JSTOR Global Plants. <http://plants.jstor.org/> Accessed 11 October 2017.  
 Leiper, G., Glazebrook, J., Cox, D and Rathie, K. (2017). *Mangroves to mountains*, 2<sup>nd</sup> edition. Logan River branch SGAP (Qld Region) Inc.: Logan.  
 Li, X. and Hedge, I.C. (2017). 'Lamiaceae', in *Flora of China* 17: 56–61. Missouri Botanical Garden: St. Louis. [http://www.efloras.org/florataxon.aspx?flora\\_id=2andtaxon\\_id=10476](http://www.efloras.org/florataxon.aspx?flora_id=2andtaxon_id=10476) Accessed 10 August 2017.  
 Munir, A.A. (1976). A taxonomic revision of the genus *Spartothomnello* (Chloanthaceae). *Journal of the Adelaide Botanic Gardens* 1(1), 3–25.  
 Munir, A.A. (1991). A taxonomic revision of the genus *Oncinocalyx* F.Muell. (Verbenaceae). *Journal of the Adelaide Botanic Gardens* 14(1), 77–84.  
 Salmaki, Y., Kattari, S., Heubl, G. and Bräuchler, C. (2016). Phylogeny of non-monophyletic *Teucrium* (Lamiaceae: Ajugoideae): Implications for character evolution and taxonomy. *Taxon* 65(4), 805–822.  
 Shepherd, K.A. and Thiele, K.R. (2017). *Teucrium disjunctum*, a new name for *Spartothamnella conescens* (Lamiaceae). *Nuytsio* 28, 139–140.  
 Stanley, T.D. and Ross, E.M. (1986). *Flora of South eastern Queensland*, Volume 2. Department of Primary Industries: Brisbane.  
 Stevens, P.F. (2001 onwards). Angiosperm Phylogeny Website. Version 12, July 2012 [and more or less continuously updated since]. <http://www.mobot.org/MOBOT/research/APweb/> Accessed 19 August 2017.  
 Toelken, H.R. (1985). Notes on *Teucrium* L. (Labiatae). *Journal of the Adelaide Botanic Garden* 7, 295–300.  
 Toelken, H.R. and Cunningham, D.D. (2008). *Teucrium reidii* (Labiatae): a new species from north-western South Australia. *Journal of the Adelaide Botanic Garden* 22, 97–100.  
 Walsh, N.G. and O'Brien, E. (2013). Gynodioecy in *Teucrium racemosum* (Lamiaceae). *Muelleria* 31, 77–80.